Landsat Archive

1/9/2008

Presented By:

Kristi Kline, USGS

F$@# ("no cost") Landsat Data

- **FY08**
  - ◆ Expansion of Landsat 7 SLC-off Data
    - Follows schedule of GLS2000 reprocessing
    - N. America, Caribbean, Africa, Madagascar, EurAsia, Australia, New Zealand, South America, Indonesia, Islands
  - ◆ Re-processed GLS data (all dates)
  - ◆ Partial processing of GLS2005 data
  - ◆ Continued additions to MRLC data
- **FY09**
  - ◆ Completed on GLS2005
  - ◆ Landsat 7 SLC-on
  - ◆ Landsat 4/5 TM
- **FY10**
  - ◆ MSS

≈USGS

Work Still Needed for Expansion

- **Completion of GLS2000 for ground control point library**

- **Landsat 4/5 TM algorithms in LPGS**

- **MSS Calibration**

- **On-demand Standard Product flow**

- **Rolling data pool**

- **Outstanding Issues**
  - ◆ Demand for media by non-U.S. customers
  - ◆ Optimal amount of disk for data pool
  - ◆ Bulk download – demand and optimal solution
  - ◆ Reprocess any of the current data? How far back?

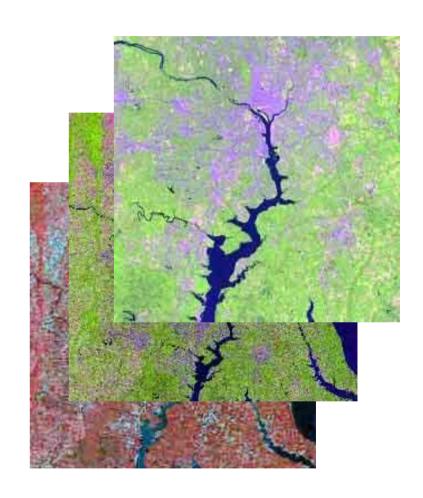# Other Potential Work

- **Full Resolution Browse -- Eugene Fosnight**

- **GeoRSS feed**
  - Demo on 1-8-2008 by Mike Neiers
  - Operational this year

≋USGS

U.S. Landsat Archive Overview
(Marketable Scenes through December 31, 2007)

- **ETM+: Landsat 7**
  - 786,700 scenes
  - 730TB RCC and L0Ra Data
  - Archive grows by 260GB Daily

- **TM: Landsat 4 & Landsat 5**
  - 734,627 scenes
  - 368TB of RCC and L0Ra Data
  - Archive Grows by 40GB Daily

- **MSS: Landsat 1 through 5**
  - 649,423 scenes
  - 19TB of Data

≋ USGS

U.S. Landsat Archive Details
(Marketable Scenes through December 31, 2007)

Satellite	Sensor	Date Range	Data Format	Scenes	Volume	Media
L1 - 3	MSS	Jul 23, 1972 – Sep 7, 1983	MSS-X	199,319	6.01 TB	DLT 7000*
L2 - 3	MSS	Jan 22, 1975 – Sep 7, 1983	MSS-P, RCC	61,601	1.82 TB	9940B
L2 - 5	MSS	Jan 22, 1975 – Oct 15, 1992	MSS-A, RCC	261,103	7.96 TB	9940B
L4	TM	Aug 17, 1982 – Nov 18, 1993	TM-A, TM-R, RCC	58,098	29 TB	9940B
L5	TM	Mar 1, 1984 – Current	TM-A, TM-R, RCC	676,529	339 TB	9940B
L7	ETM+	Apr 15, 1999 – Current	L0Ra, RCC	786,700	730 TB	9940B
				2,043,350	1,113 TB	

* DLTs to be converted to 9940B.

USGS

Definitions of Data Formats

- **MSS-X**
  - AKA: Wide Band Video (WBV) which is technically a media type not a data format
  - Data have been radiometrically corrected for detector gain and bias values.
  - Not available through LAM/LACS
  - Calibration data is available
  - Archived on a scene-by-scene basis
  - The data was reformatted from Band Interleaved by Pixel Pair (BIP2) to the band sequential format (BSQ) we now call MSS-X.
- **MSS-P (P means "processed source")**
  - Data have been corrected for system radiometric and geometric distortion.
  - No Calibration Data available
  - Archived on a scene-by-scene basis
- **MSS-A (A means "archive source")**
  - data have been radiometrically corrected for detector gain and off set.
  - Calibration Data Available
  - Archived on a scene-by-scene basis
- **TM-A (A means "archive source")**
  - Data have been radiometrically corrected for detector gain and off set.
  - Archived on an interval basis
- **TM-R (A means "Raw source")**
  - Data have been corrected for system radiometric and geometric distortion.
  - Archived on an interval basis
- **ETM+**
  - data have been reformatted for scanning pattern, detector arrangement and detector offsets.
  - Archived on an interval basis

≋USGS

Landsat Off-site Archive

Start Date	1/5/2007
Report Date	12/28/2007
Completion Date	7/3/2008

Data Type	Start Date	Completion Date	Media to Copy	Media Complete	% Complete
TMA_RCC	1/5/2007	1/11/2007	27	27	100.00%
MSA_RCC	1/12/2007	1/28/2007	69	69	100.00%
MSP_RCC	1/28/2007	2/2/2007	35	35	100.00%
TMR_RCC	2/2/2007	8/2/2007	1237	1237	100.00%
L7RAW	8/3/2007	7/3/2008	2289	1014	44.30%
Total Media			3657	2439	66.69%

Added 55 more tapes to TMR_RCC on July 18th
Added 175 more tapes to L7RAW on July 25th
Added 28 more tapes to TMR_RCC on Sept. 21
Added 17 more tapes to TMR_RCC list on Dec.19, 2007

Other On-going Work

- **Move Archive from Powderhorn Silo to SL8500: Summer 2008**
  - Old archive silo reaching obsolescence soon
  - Will share new archive unit with other projects at EROS
- **Metadata Initiatives**
  - LMDD
    - Implemented this year
    - Standardizes archive metadata across Landsat missions
  - Collection of IC metadata from current/past missions
- **Recovery of "Orphan" Wide-band data**

≈USGS

Calibration Efforts

- **L5 TM is now included in CPFs for LPGS**
- **L4 TM Calibration in IAS Q4 FY2008**
- **MSS Calibration 2009**

≋USGS